

## Overhaul the 455-kVA generator set at T&A building

### C. STATEMENT OF WORK

#### C.1. Specification of existing equipment.

The U.S. Agency for Global Media, Thailand Transmitting Station, Udon Thani, is soliciting proposals to overhaul the standby generating system. The existing 455 kVA diesel engine generator set is about 25 years old. Some of electronic control functions are not in good working order and engine system functions may have deteriorated.

##### Diesel engine system

The CATERPILAR 3412 diesel engine is a 4 stroke, multi-cylinder, direct injection, and compression type system, operating at a speed of 1500 rpm producing 403 kW hour. The engine is water cooled, has a radiator, cooling fan, lubricating oil pump, lubrication oil pressure gauge, tachometer, digital or electronic type governor, integrated hours-run recorder, and over speed trip system.

##### Alternator and control module system Operation

The SR4 alternator is floor-mounted with a drip proof containment system, self-ventilated and is directly coupled onto the diesel engine by flexible driving discs. The full load output voltage is 400 volts, 657-amp, 3 phase, 4 wire, 50 Hz at 0.8 power factor with its neutral solidly earthed under any load condition including transient overloads.

The 7C1000 generator engine control panel (ECM) has and all necessary instrumentation and accessories for operation and control of the generator set. On sensing the commercial utility mains voltage dip below 40% of the required rated voltage, the control panel sends a signal to start the generator. If after 5 successive start attempts the diesel generator does not start up, the alarm signal is activated. The generator control panel is system consist of the following:

- Voltmeters
- Frequency meter
- Power factor meter
- Amp meters
- Kilowatt meter with maximum demand indicator
- Kilowatt hour meter
- Hour run meter
- Start-stop and automatic mains monitoring system
- Emergency off push button
- Manual speed adjusting switch, reset switches for overload, alarm muting
- Fully automatic trickle battery charger with battery voltmeter

#### C.2. Contractor Scope of Work

The Contractor shall provide all supervision, labor, materials, equipment, tools, services and any miscellaneous items necessary to perform the work as stated. All work is located

at the U.S. Agency for Global Media Transmitting station site at Udon-thani, Udon-thani Province, Thailand.

C.2.1 Overhaul the 455 kVA generator set at T&A building.

The contractor shall overhaul the Generator System. The Generator Set system shall include the following:

- CATERPILAR 3412 industrial and EPG diesel engine
- Water cooled body jacket system
- Fuel system
- Lubricating oil pump system
- Lubrication oil pressure gauge system
- Engine starting system
- Mechanic or Electronic type of governor
- Engine system
- Valve and Bridge adjustment
- Power coupling system
- Air induction and Exhaust system
- Turbocharger system
- All other necessary auxiliaries.

C.2.2. The contractor shall overhaul the alternator and the Engine control module (ECM) model 7C1000 and its components identified below:

- Generator lead connections
- Electrical wiring system
- Rectifier system module
- Automatic voltage regulator system
- Functional testing on ECM
- All sensors and indicators
- All alarm system
- All protection system
- Synchronizing system
- Annunciator and monitoring system

**D. NOTICE OF DELAY**

If the Contractor becomes unable to complete the contract work at the time(s) specified in the awarded contract because of technical difficulties, notwithstanding the exercise of good faith and diligent efforts in the performance of the work called for hereunder, the Contractor shall give the Contracting Officer written notice of the anticipated delay and the reasons there-for. Such notice and reasons shall be delivered promptly after the condition creating the anticipated delay becomes known to the Contractor. When notice is so required, the Contracting Officer may extend the time specified in the Schedule for such period as deemed advisable.

**E. SUBMISSION OF INVOICES**

The Contractor shall submit invoices consisting of an original and one copy to the following address:

Station Manager  
U.S. Agency for Global Media  
Thailand Transmitting Station  
Phen-Ban Dung Road  
A. Ban Dung  
Udon Thani 41190

**F. SPECIAL CONTRACT REQUIREMENTS**

**F.1 INSURANCE**

a) Personal Injury, Property Loss or Damage. The contractor hereby assumes absolute responsibility and liability for any and all personal injuries or death and/or property damage or losses suffered due to negligence of the contractor's personnel in the performance of the services required under this contract.

b) The Contractor agrees that the Government shall not be responsible for personal injuries or for damages to any property of the contractor, its officers, agents and employees, or any other person, arising from an incident to the contractor's performance of this contract. The Contractor shall hold harmless and indemnify the Government from and all claims arising there from, except in the instance of gross negligence on the part of the Government.

**F.3 WORKING HOURS**

The Contractor shall perform its site construction work during normal USAGM business hours, currently between 8:00 a.m. to 3:00 p.m. except on Thai and American holidays. Any on-site work by the Contractor outside of these hours must be coordinated in advance with, and approved in writing by, the Contracting Officer. All work must be completed for the day and all equipment returned to normal operating condition by 3:00 p.m. Exceptions granted by COR.

**F.4 SAFETY REQUIREMENTS AND SUBMITTALS**

Contractor will provide Personal Protective Equipment for his employees, as typically industry standards required for the work being performed.

**END OF STATEMENT OF WORK**